

**CLEAN WATER ACT
SECTION 404(b)(1) EVALUATION**

**GENERAL REEVALUATION REPORT
MISSOURI RIVER LEVEE UNIT L142
JEFFERSON CITY, MISSOURI**

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**APPENDIX G
CLEAN WATER ACT
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SECTION 1 - PROJECT DESCRIPTION

A. Location. The study area is located at the southern edge of Calloway County, Missouri from Turkey Creek (river mile 144.5) on the west to the approximate area of Niemann's Creek (river mile 140.5) on the east. The city area is known informally as North Jefferson City. Jefferson City is on the opposite river bank. A January 10, 1998 aerial photograph of the approximate study area is shown on Figure 12 of the main report.

The North Jefferson City area features cropland and industrial development including the Jefferson City Airport. The airport and the previous town of Cedar City were annexed by Jefferson City in 1989. Cedar City was a town of about 450 persons in 1980. After the Flood of 1993, nearly all of the residences and businesses were acquired and removed from the floodplain as a flood hazard mitigation measure. Cedar City accounted for most of the area west of Highway 54 within the preliminary alignment for the proposed L142 levee.

B. General Description. The proposed action is to provide flood protection to the area known as North Jefferson City. The preferred plan is shown on Plate 7 of the Main Report. This plan includes 24,958 feet (4.73 miles) of levee, contains 6 drainage structures and 5 stoplog gap type closure structures. The elevation of the levee at the Jefferson City gauge (river mile 143.9) is 568.6 feet NGVD which protects against a water surface elevation of 564.0 (gauge reading 43.9). The difference between the height of the levee at the gauge and level of protection provided is due to the hydraulic effects caused by the bridge constriction.

C. Authority and Purpose. The Missouri River Levee System (MRLS) was authorized by Congress in the 1941 and 1944 Flood Control Acts. Levee Unit L142 if constructed, would be located on the floodplain landward of the left bank of the Missouri River at Jefferson City, Missouri. In December 1973, Levee Unit L142 was classified "inactive" due to lack of economic justification, based on a 1960's restudy. The Kansas City District (KCD) Corps of Engineers conducted an initial assessment in 1991 prior to requesting reclassification of MRLS Unit L142. Reclassification from the inactive to active category was approved by the Corps of Engineers Washington Headquarters in June 1991. The Missouri River Division (MRD) of the Corps of Engineers approved the use of a preliminary Planning, Engineering and Design (PED)

estimate for programming, and a 4-year PED schedule. The KCD received the initial PED funding for the General Reevaluation Report (GRR) in November 1992. The GRR will determine the feasibility of constructing an appropriately sized and aligned Federal levee within the area previously authorized for the construction of MRLS Unit L142.

D. General Description of Fill Material. Fill material which will be used to construct the levee structure consists of silty lean and fat clay, occasional transition zones were encountered between the substratum sands and the top stratum of clay. Occasional clay lenses were encountered in the sand stratum. Soil boring sample results are located in Appendix B of the GRR, Section 4.

E. Description of the Proposed Discharge Site. The site of the proposed discharge is located in the floodplain of the Missouri River, Turkey Creek and other drainages located in the project area. Site visits and examination of National Wetland Inventory maps of the project area revealed that 2 main types of wetlands, palustrine emergent, and farmed, will be affected by placement of the levee and associated structures. The total area (direct and indirect) in these wetland sites that would be impacted by the proposed action is approximately 49.2 acres.

F. Description of Disposal Method. Materials would be placed at the fill site by mechanical means. Equipment would be standard earthmoving construction equipment.

SECTION II. FACTUAL DETERMINATIONS

A. Physical Substrate Determinations. The substrate is considered to be hydric soils.

B. Water Circulation, Fluctuation, and Salinity Determinations. Water chemistry, clarity, color, odor, taste, dissolved gas levels, nutrients, and eutrophication would not be affected by the project. Salinity determinations are not applicable to the area

C. Suspended Particulate/Turbidity Determinations. Fill activities associated with the levee project are not expected to produce any significant change in suspended particulate matter or turbidity for the Missouri River, Turkey Creek or other minor drainages located in the project area. No noticeable impacts to dissolved oxygen levels, toxic metals, organics or pathogens would be anticipated. Photosynthetic, filter feeder, and sight feeder impacts are expected to be minimal to nonexistent.

D. Contaminant Determinations. Construction material would be chemically stable and noncontaminating. Construction would take place in areas where the soil is not considered likely to be contaminated. Neither the fill nor its placement would cause relocation or increases of contaminants in the aquatic system. Certification of the project under Section 401 of the Clean Water Act is being requested from the Missouri Department of Natural Resources, and all requirements would be met prior to construction.

E. Aquatic Ecosystem and Organism Determinations. The proposed actions should have no significant effect on the aquatic ecosystem. No significant impacts to benthos, plankton, or nekton are anticipated. Three federally listed threatened or endangered species, the Indiana bat (*Myotis sodalis*), the pallid sturgeon (*Scaphirhynchus albus*), and the bald eagle (*Haliaeetus leucocephalis*) can potentially occur in the project area. Threatened or endangered species are discussed in the preceding Environmental Assessment (Section 6, Environmental Consequences of the Preferred Alternative, subparagraph 6.1.9, Threatened and Endangered Species). It has been determined that there would be no impacts to federally listed species or their critical habitats as a result of this project.

F. Proposed Disposal Site Determinations. No violations of water quality standards should occur. Fill material would be obtained from borrow sites located in the project area. The proposed actions would have no adverse effect on municipal or private water supplies; recreational or commercial fisheries; or water-related recreation, aesthetics, parks, national historic monuments, or similar preserves. The project may enhance water quality and recreation within the project area, as described in detail in the EA, Sections 6.2.2, 6.2.4, and 6.4.

G. Determination of Cumulative Effects on the Aquatic Ecosystem. Impacts from construction would be minor and temporary. Whenever possible wetlands were avoided. An opportunity to minimize impacts to wetlands was utilized by adjusting the alignment of the tieback levee at the downstream end. Originally the levee alignment was such that it would have cut through the middle of a remnant meander scar wetland. By adjusting the alignment, the project was able to avoid all but a small portion of the wetland at the downstream end. A mitigation plan for replacing wetlands that could not be avoided and replanting trees in the area post-construction has been prepared. This plan consists of a 42 acre impervious borrow site which would be converted to a wetland, with a native grass buffer, and adjacent scrub/shrub habitat, as described in detail in Section 6.1.6 of the EA.

The fill material used in levee construction would be composed of chemically stable, noncontaminating material. Therefore, no detrimental cumulative or secondary impacts are expected to occur.

H. Determination of Secondary Effects on the Aquatic Ecosystem. No adverse secondary effects are expected. An evaluation for E.O 11988, Flood Plain Management, was completed for this project, and is located at Appendix H. The conclusion of the E.O. 11988 analysis was that the potential for induced development as a result of increased flood protection is not probable. Land available for development is limited in the project area, and would be restricted by airport regulations. Therefore secondary impacts to wetlands from future development pressures should not occur. Any development that did occur in the project area, would be subject to Clean Water Act regulations and subject to an evaluation for consideration of a Section 404 permit.

SECTION III. ACTIONS TAKEN TO MINIMIZE ADVERSE IMPACTS

A. Whenever possible wetlands were avoided. An opportunity to minimize impacts to wetlands was utilized by adjusting the alignment of the tieback levee at the downstream end. A mitigation plan for replacing wetlands that could not be avoided has been prepared and is discussed briefly here, details of the mitigation plan are located in Section 6.1.6 of the EA.

B. For replacement of 16.6 acres of emergent wetlands which would be directly impacted, it is proposed to provide an irregular shape, and contour the bottom of 33 acres of the borrow area in order to maximize hydrologic conditions and mimic natural emergent wetlands. Depths will range from 18 inches to 3 feet or more with gently sloping sides. Hydrology for the proposed emergent wetland area will be from surface runoff as well as from Turkey Creek when it overflows its banks, most likely in the Spring season. Wetland vegetation should establish in the proposed mitigation area naturally from seed sources washed in from Turkey Creek, dormant seeds in the existing soils, and from a couple of small wetlands that currently exist in this area.

C. As out-of-kind mitigation for farmed wetland impacts, it is proposed to replace them with approximately 9 acres of native grasses and forbes located adjacent to the proposed 33 acre emergent wetland. This grass area would act as a buffer to the wetlands from runoff from highway 54/63. The native grass buffer would also provide additional wildlife habitat values in the form of a food source, nesting habitat, and shelter. Native bottomland, hardwood tree species and shrubs would also be planted on the perimeter of the proposed mitigation site which would also produce a scrub/shrub habitat and provide additional wildlife benefits.

D. In addition to the 9 acre out-of-kind mitigation proposed for replacement of farmed wetlands impacted by the proposed project. Shallow areas from random borrow sites located on the eastern and southern edges of the project area would be allowed to regrow naturally and should produce farmed wetlands which should replace those removed by levee construction or borrow activities. It is anticipated that approximately 32 acres of farmed wetlands would be impacted by this alternative. Borrow areas for random fill total 199 acres, another 96 acres has been identified for impervious borrow on the eastern edge of the project area. The random borrow areas are located south of Mokane road outside of the proposed levee. It is proposed to contour these borrow sites to varying depths to have some low areas which will hold water on a periodic basis. These areas will be periodically flooded by the Missouri River and should provide good wetland habitat during wet periods. The 96 acre impervious wetland area has impervious soil material to a depth of at least 10 feet. This indicates that these contoured borrow sites would hold water, even after borrow activities are conducted. During dry periods these areas would likely be farmed similar to current activities. There should be no net loss of farmed wetlands as a result of this action, and would more than likely be an increase in overall acreage from current conditions.

E. Other Jurisdictional Waters were identified during the wetland delineation. These areas are composed of existing drainage ditches. Some work would be conducted in these drainage ditches mainly in the form of minor shaping and contouring to accommodate drainage from the proposed levee structure. It is not anticipated that this work would have negative effects on these jurisdictional waters.

SECTION IV. FINDINGS OF COMPLIANCE WITH THE RESTRICTION ON DISCHARGE.

1. No significant adaptations to the guidelines were made relating to this evaluation.
2. The alternative of No Federal Action was not feasible because it would not provide protection from flooding by the Missouri River.
3. Certification under Section 401 of the Clean Water Act will be applied for from the State of Missouri. Certification will be obtained prior to construction.
4. The project would not introduce toxic substances into nearby waters or result in appreciable increases in existing levels of toxic materials.
5. No significant impacts to Federal or State-listed endangered or threatened species would result from the project.
6. The proposed project is located in an inland freshwater system. No marine sanctuaries are involved.
7. No municipal or private water supplies would be affected. Recreational values would remain the same or more than likely would be enhanced. No sensitive or critical habitats would be significantly affected, and no long-term adverse impacts would occur. Water quality would be improved by providing protection to the wastewater treatment plant. This should prevent future releases of untreated, raw sewage into the Missouri River from the treatment plant during flood events.
8. Project construction materials will be physically and chemically stable.
9. The preferred alternative 10a, the NED plan, has been reviewed for environmental impacts. An environmental assessment supports a determination that the proposed action would lead to a Finding of No Significant Impact, pending public review and comment. Whenever practical the preferred alternative avoided wetlands and other important wildlife habitat such as old specimen trees. The preferred alternative also minimized wetland impacts by making minor adjustments to the alignment. Activities associated with the construction of the preferred alternative such as borrow activities would provide opportunities to enhance farmed wetland areas. Also, construction of the preferred alternative would provide opportunities to enhance recreation activities in the project area. Any other impacts which could not be avoided would be mitigated as proposed in the EA.

10. When compared to the other alternatives considered for reducing flood damages in the project area, the preferred alternative, 10a, which was determined to be the NED plan, is the least environmentally damaging alternative that still meets project purposes.

11. The proposed actions would not significantly affect water quality or the aquatic ecosystem and are found to be in compliance with the requirements of guidelines for Sections 404(b)(1) of the Clean Water Act, as amended, with inclusion of appropriate and practical conditions to minimize adverse effects on wetlands and mitigate for unavoidable impacts.

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To be signed following the review of comments received during the public comment period.